

Dive Plan 4206 - 30 June 2006**Port:** M. Lilley**Starboard:** R. Lutz**Pilot:** M. Spear**On Bottom Target:** x = 4457 y = 77877 9°50.24963N 104°17.56711W**Objectives:** Land near sediment trap, transit to Bio9, recover Hobo, sample, deploy resprobe, markers and settling experiments, transit via P; pump deployment at BM82 (Mkr 8); transit south to TWP.

1. Turn on ECHEM at 200m, leave on as descend to bottom, positioned in its holster.
2. Turn on magnetometer at 1000m and do a 3 min spin clockwise and then counterclockwise, note time of spin.
3. Land on bottom ~150m west of the ASCT at the latitude of the Bio9 vent area.
 - pick up a piece of 2006 flow at the landing site (or as soon as you encounter it)
 - deploy a marker at the sample site
 - locate sediment trap.
4. Transit E to the ASCT and get down into it to find Bio9.
5. **At the Bio9 vents:** **x=4618 y=77974 hdg=108 d=2511m**
 - determine number of vents; if there are multiple vents measure the temperature and determine which is hottest
 - collect sulfide from orifice
 - 2 majors pairs
 - 2 gas tights
 - use toaster
 - pick up basalt
 - recover Hobo (#3=Bio9, #1=Bio9', #4=Bio9'')
 - deploy Hobo (s)
 - deploy resprobe
 - deploy marker(s).

In Nov. 2004 Bio9 was 386°C, Bio9' was 384°C, Bio9'' was 376°C.

6. Look around the Bio9 vent area for areas of intense diffuse flow.
7. If there is 'appropriate' diffuse flow at the Bio9 vents:
 - measure its T with hi or lo T probe to find the 'hottest' place
 - ECHEM to determine placement of following
 - deploy setting experiments as follows:
 - [3 'sandwiches'] [4 'TAMS' and 2 'rounds'] in >20°C flow
 - ECHEM on center of each TAM and round
 - 4 TAMS in ambient (non-venting) spot (move slightly?)
 - ECHEM on center mesh of each ambient TAM
 - pick up rock with early colonists and place in grey biobox/RNA chamber
 - ECHEM where rock was obtained
 - filter slurp (snowblower) material
(watch meter voltage carefully >6minutes)
 - sample *Riftia* (if observed) and place in clear biobox .
8. If no appropriate site for a resprobe deployment is found at the Bio9 vents, transit south through the ASCT to P vent.
9. **At P vent:** **x=4577 y=77921 Hdg=010 d=2510m Mkr10**

- measure T with hi T probe
- 1 majors pair
- 1 gas tight
- deploy resprobe
- sample basalt
- (there is already a Hobo in this orifice)
- look for old Hobos (#10 new style in P, #2 new style in P-middle)
- deploy marker(s).

On 4203 P vent was 387°C.

10. Transit south to BM82 (Mkr 8) vent area.
11. Look for Alvinellid Pillar (x=4688 y=77645 (-50-60m?) and recover Hobo #14 (old style)).
12. **At BM82/Mkr 8: x = 4608 y=77581 Hdg=310 d=2504m**
 - position pump snorkel in diffuse flow
 - position sediment trap as needed (?)
 - measure temperature of black smoker at Ty/Io
 - recover Hobo from Io (new style # 8)
 - 1 majors pair
 - 1 gas tight
 - deploy Hobo if appropriate
 - sample basalt with early colonizers and place in grey biobox/RNA chamber.

In Nov. 2004 Ty vent was 310°C and Io was 355°C.

13. Transit south through BM141/2 area: x = 4746 (-50-60m?) y = 77144 (-20-40m?)
14. Transit south to TWP.
15. **At TWP: x = 4845 (-50-60?) y = 76693 (-20-40?)**
 - see if it has re-activated
 - measure temperature
 - collect remaining bottles
 - deploy Hobo if one remains
 - deploy marker.

Continue south as time permits.

BE SURE TO IMAGE AND DOCUMENT EVERYTHING AND LOOK FOR FUTURE SAMPLING SITES. DROP ADDITIONAL MARKERS AS NEEDED.

Basket load:

- 2 marker launchers with 8 markers
- downlooking camera
- ECHEM probe and can
- Alvin hi T probe
- Alvin lo T probe
- slurp-filter
- 2 grey bioboxes/RNA chambers
- 1 clear square biobox
- 2 scoops
- 1 resprobe with ICL can
- 4 majors pairs
- 5 gas tights
- 1 toaster
- 8 TAMS
- 2 rounds
- 3 sandwiches
- 2 hobos

ECHEM laptop and power cord/charger in ball.

Origin is 9°08'N and 104°20'W.